advise a return for a second series of injections after six months. This will prevent those rare instances of death when the particular virus concerned has a long incubation period. In the case of face bites or very extensive wounds one of the writers of this paper has recently recommended that the entire course of treatment be repeated two weeks after the completion of the first.

GYNECOLOGY

UNDER THE CHARGE OF
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Trigonitis in the Female.—There is a large and common group of cases, in which the symptoms are chiefly those of bladder irritability with a clear urine and no gross intrinsic or extrinsic pathology to explain them. In these cases careful examination with the cystoscope will reveal definite changes in the trigone as the chief pathological feature and to this group of cases we apply the term cystitis colli or trigonitis. The onset is generally insidious with gradually increasing frequency of urination, especially by day, but somewhat also at night. With this there is usually no pain, but at the end of the act of urination there is generally a sensation of incompleteness and a desire to pass more. The patient will empty her bladder and within two or three minutes have an uncontrollable desire to urinate again which usually, if yielded to, accomplishes nothing or at most only a few drops are expelled. There is an almost constant desire to urinate and many patients complain that by day they are obliged to relieve themselves as often as every five minutes, voiding only a few drops each time. In the later stages there may be some pain but it is rarely very severe, and occasionally there may be a slight terminal hematuria. The treatment of these cases has always been more or less unsatisfactory, although many varieties of treatment have been advocated. The latest treatment of this condition, as described by LINDEMAN (*Surg., Gyn., and Obst.*, 1920, xxx, 64), consists of the injection of quinin and urea hydrochloride into the bladder mucosa. This treatment is based on the well known fact that this drug, when injected into the tissues, especially in a strength of over 1 per cent., causes a deposit of fibrin and a considerable induration at the point of injection which not infrequently remains for months. Furthermore the outstanding feature of the cystoscopic picture of this disease is intense congestion, hypertrophy and hyperplasia of the subepithelial bloodvessels and the swollen mucosa. Therefore Lindeman deduced that if anything could cause the destruction or at least constriction or compression and thereby reduction in size and possibly in number of these bloodvessels, the disease would be relieved and he felt that the injection of quinin and urea hydrochloride could accomplish these objects. He uses a sterile 2 or 3 per cent. solution of the drug in normal saline solution colored with methylene blue (for technical purposes) and makes the injections by means of a very long flexible needle which is introduced into the bladder through the catheterizing channel of a cystoscope. The needle is inserted into the mucosa of the trigone, preferably near one of the ureters, and a few drops of the solution are injected, producing a small blue wheal. The needle is then inserted into other areas of the trigone and the process repeated until as much of the trigone as possible has been injected. He states that practically all of the patients that have had this treatment have been greatly relieved and many of them required no further treatment. There is one possible danger of this treatment and that is the tendency of this drug to cause necrosis of the tissues when injected under pressure, but thus far Lindeman has had no such untoward result although he realizes the possibility of this outcome.

Ruptured Ovarian Cyst Without Symptoms.—Rupture of ovarian cysts is not, of course, extremely rare but from the clinical standpoint the case reported by BEVAN (*Surg. Clinics of Chicago*, October, 1919, p. 1083) is of interest because there was a complete disappearance of a very large tumor without any symptoms. The patient was a woman, aged thirty-five years, who had been married a number of years but had never had any children. On examination she presented a large cystic tumor of the abdomen which was diagnosed as an ovarian cyst and operation was strongly urged. About two weeks later she returned and stated that the tumor had disappeared, that her clothes were four inches larger than they were before and that she had lost eight or ten pounds in weight. Examination at this time confirmed her statement as the tumor had completely disappeared and there was not even any mass palpable on bimanual examination. Bevan suspected a ruptured cyst and sent her to the hospital for operation and when the abdomen was opened a cyst of the left ovary was found which contained between two and three quarts of yellowish fluid and at one point the cyst wall was very thin and adherent to the cul-de-sac and Bevan believes that it was at this point that the cyst had ruptured. The total absence of symptoms, either at the time of rupture or subsequently makes this case an interesting rarity.

Ovarian Residue in Therapeutics.—For some time GRAVES (*Surg., Gynec., and Obst.*, 1919, xxix, 537) has been advocating the use of ovarian residue in the treatment of those conditions which are usually attributed to deficient ovarian secretion. By the term ovarian residue he refers to that part of the ovary which remains after ablation of the corpus luteum and which has usually been discarded as valueless. The results that he has attained with ovarian residue so closely parallel the effects obtained from whole ovary that it has been impossible to draw any definite conclusions in favor of one or the other preparation. He feels safe in stating, however, that the ovarian secretion is not solely confined to the corpus luteum since the secretion of the atretic follicles and the corpus luteum is a similar product being manufactured by analogous cells, namely by those proliferated from the internal theca. Ovarian residue preserves its integrity longer than do those ovarian preparations which contain corpus luteum substance so that under present conditions of preparation ovarian residue is in general superior in its clinical results to the commercial articles now on the market. The case reports which are included in his articles are divided into three groups: (1) those exhibiting the symptoms of the artificial or natural menopause; (2) those treated for such menstrual disturbances as amenorrhea, oligomenorrhea, delayed menses and clotting; (3) those of essential dysmenorrhea. The majority of the cases of the first group were treated for postoperative hot flushes. In only a few of the cases were the symptoms severe, and in many they were not a source of complaint, being elicited only after questioning the patient. Ovarian residue was administered therefore, in many instances chiefly for the purpose of testing its effects on these characteristic vasomotor manifestations. For hot flushes, ovarian residue like the other ovarian preparations, acts as a specific palliative rarely failing to give some relief. For those multiple neurosecretory disturbances such as dizziness, sleeplessness, headaches, muscular pains, buzzing in the ears, asthenia, etc., which are so common in the natural, though not in the artificial menopause, ovarian residue is helpful in many cases. In this group there were 41 cases and the treatment exerted a beneficial action in 32 or 78 per cent. In the second group there were failures, especially in the long standing cases of amenorrhea, although in some instances of delayed menses and clotting the results were rather striking. Even in the amenorrhea cases in which the menstrual rhythm could not be reëstablished, the patients often mentioned the tonic effect of the treatment. The third group of essential dysmenorrhea is quite incomplete since he has only recently used the residue in the treatment of this important disorder. Although he is now treating a number of dysmenorrhea cases of the anteflexion type with the hope of avoiding operative interference, sufficient time has not elapsed to warrant definite conclusions.

Indications for Sterilization.—In considering the question of when sterilization in women is justifiable, PETERSON (*Jour. Mich. State Med. Soc.*, 1919, xviii, 608) calls our attention to the fact that there are two kinds of artificial sterilization of women—primary artificial sterilization and incidental artificial sterilization. In primary artificial sterilization, the end in view is solely to prevent future conception. Incidental artificial sterilization means the sterilization of the woman during the course of another operation in the belief that the patient's life or well-being would be seriously impaired by future pregnancies. Primary artificial sterilization should be comparatively infrequent, since the organic disease which calls for the operation at the same time renders it hazardous and in the uncertainty of the woman with organic disease requiring sterilization, the physician will hesitate to advise this procedure when the uterus can be emptied with less danger in case pregnancy supervenes. In incidental sterilization, the woman can be rendered sterile by a simple additional operative technic the dangers of which are practically *nil*. Peterson believes that all operations devised for temporary artificial sterilization are based upon wrong premises, since the indications calling for sterilization are bound to grow worse, never better. As a rule a woman should never be sterilized without her consent and that of her husband, and of her family or other physician. Finally, careful study of the history of the patient, especially her puerperal history, her past and present condition, will enable the physician to decide for or against primary and incidental artificial sterilization in pulmonary or other forms of tuberculosis, diseases of the kidneys or heart, mental diseases, pelvic contraction, defects in the reproductive organs due to previous labors or operations, and operations of such nature that subsequent pregnancy and labor are rendered dangerous.

PATHOLOGY AND BACTERIOLOGY

UNDER THE CHARGE OF

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The Size of the Spleen in Immune Mice.—Although the literature is full of articles upon the part played by the spleen in the growth and development of tumors, it will be found that there is no evidence so far advanced for the significance of the spleen in resistance that cannot be matched with equally good evidence against its participation. WOGLOM (*Jour. Cancer Res.*, 1919, iv, 281) gives a brief review of the chief arguments as a preface to his work on this much debated subject. Underlying all the reports of an hypertrophied spleen in tumor-bearing or immune mice is the tacit assumption that the organ was of normal size before inoculation. However, a careful study of mice and the most common mouse infection (mouse-typhoid) will reveal the fact that very few strains are free from this disease and consequently mice which are generally considered normal have enlarged spleens. The author performed a series of experiments on mice to determine the average weight of a normal spleen. The direct measurements of the organ were made by laparotomy and in order to determine whether or not the spleen enlarged after the operation two sets of animals were autopsied two and seven weeks after the incision and first measurements were made. It was found that of the two-week animals 20 per cent. developed an hypertrophied spleen and of the seven-week 50 per cent. showed a still greater enlargement of this organ. The author makes allowances for both cage infection and infection at operation but is unable to come to any definite conclusions from the data at hand. He thinks it fair to assume that laparotomy does not result in enlargement of the spleen, when done with reasonable cleanliness. After extensive experiments in which mice were inoculated with various immunizing and non-immunizing materials the author is unable to adduce any positive results. The presence or absence of an enlarged spleen in natural, as in acquired immunity, is a matter of pure chance so far as susceptibility or resistance to tumors is concerned. Splenic enlargement therefore is certainly